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| 10/757,419 | 01/15/2004 | Berndt Brenner | P24717 | 3378 |

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GREENBLUM & BERNSTEIN, P.L.C.
1950 ROLAND CLARKE PLACE
RESTON, VA 20191

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| EXAMINER |
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DINH, TIEN QUANG

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| ART UNIT | PAPER NUMBER |
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3644

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07/02/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com
pto@gbpatent.com

Office Action Summary

Application No.

10/757,419

Applicant(s)

BRENNER ET AL.

Examiner

Tien Dinh

Art Unit

3644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 11-66, 69-104 and 136-145 is/are pending in the application.
4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-13, 16, 17 and 21 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8, 14, 15, 20, 24-27, 49, 50, 55, 58-63, 65, 66, 69-76, 97, 136, 137 and 140-145 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Tien Dinh

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

Continuation of Disposition of Claims: Claims withdrawn from consideration are 6,18,19,22,23,28-48,51-54,56,57,64,77-96,98-104,138 and 139.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7-8, 14, 15, 20, 24-27, 49, 50, 55, 58, 62, 63, 65, 66, 69, 97, 136, 137, 140-145 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller et al in view of Palm, Bauer, and Schmidt.

Mueller et al teaches a lightweight structural component (that can be oriented lengthwise and crosswise) having panel/skin sheet 40, side pieces made up of parts 26, 27, that form an angle of 7-50 degrees, and stringer made up of parts 21-25. The two side pieces has end surfaces that are connected to the metal panel 40 in a material-locking manner. Please note that the head portion is element 27' that is coupled to a bar portion in figure 1. Mueller et al is silent on the thickened region/stiffening base in the panel, the metal to make up the panel and the stiffening elements, and the use of "weld joints". However, Schmidt discloses that a thickened region in a panel 4 where a side piece 7a is connected to is well known. Schmidt discloses that using welding techniques such as laser beam welding and other know techniques such as friction stir, etc. to combine two parts are well known. See column 5, lines 51-60. Palm discloses that a support element 2 that is metal that is attached to a metal panel 1 via welding is well known in the art. Please note that both Palm and Schmidt disclose that side pieces are welded to the

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thickened area of the panel. As further support, the examiner has cited Bauer to teach that use of metal or composites are merely substitution of parts (see column 2, lines 44-47).

It would have been obvious to one skilled in the art at the time the invention was made to have made the panel and the stiffener of Mueller et al out of metal and to use a thickened region on the panel as taught by Schmidt, Bauer, and Palm to increase make the aircraft structure to be stronger, easier to build, cheaper, and to prevent cracks.

Re claims 2 and 63, please note that the stiffener element is oriented lengthwise and crosswise since its base parts that are connected to the panel runs lengthwise and the stiffener run crosswise since it is running into and out of the page as viewed from figure 1.

Re claim 5, stringers are defined as “a longitudinal reinforcement in the fuselage or wing of an airplane”. Mueller et al’s stiffeners are stringers.

Re claims 20 and 145, please note that to make the components of the component integral are steps that is routine to one skilled in the art would have made to make a stronger structure. See Nerwin v. Erlichman, 168 USPQ 177, 179. Please also note that stiffeners that are integral are disclosed Palm. One skilled in the art would have made stiffeners integral to make them stronger.

RE claim 24, please note that Mueller et al discloses edge areas 27’, 27 that are parallel to the panel.

RE claim 27, please note that Mueller et al as modified by Palm and Schmidt disclose first and second base portions. This would mean that once a first and second base portions are put into Mueller et al’s system, the base portions rest adjacent to the inner surfaces of the two side pieces.

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RE claims 49-50, please note that the use of metal cutting, metal removal, deformed during rolling-in, etc. as claimed are obvious parts/steps that one skilled in the art would have used to make a stronger aircraft. The applicant has not cited the criticality to these claimed parts either.

Re claim 136, please note that the use of metal on a panel and stiffening element is a well known idea in this day and age to make the structure stronger. See prior arts noted above. Please also note that the bar portion first thickness is where element 121 is located. This thickness is greater than the side pieces' thickness.

Re claim 140, the distance between the two separate joint zones is greater than the first thickness. See figure 1.

Re claim 141, the distance between the two separate joint zones is greater than the second thickness. See figure 1.

Re claim 142, the distance between the two inner edges of the two separate joint zones is greater than the first thickness. See figure 1.

Re claim 143, the distance between the two inner edges of the two separate joint zones is greater than the second thickness. See figure 1.

RE claim 144, Mueller et al as modified by Palm, Bauer, and Schmidt disclose two weld joint zones that are arranged between the thickened region of the panel and the two side pieces. Since the stiffeners are mounted on the thickened region of the panel and are welded there, this meets the limitation of the claim.

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Claims 59-61 and 70-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller et al as modified by Schmidt, Bauer, and Palm, as applied to the claim above, in view of Lackman et al.

Mueller et al as modified by Schmidt, Bauer, and Palm discloses all claimed parts (including rough profile) except for reinforcing element. However, Lackman et al teaches that reinforcing element (in shape of an isosceles triangle is well known in the art.

It would have been obvious to one skilled in the art to have used reinforcing element in Mueller et al's system as modified by Schmidt and Palm and as taught by the Lackman et al to make the structure even stronger.

Re claim 60, it would have been obvious to one skilled in the art to have used a material of higher modulus of elasticity in the reinforcing element than those of the panel and stiffening element so that the aircraft can absorb more vibration and be made stronger. This merely involves a routine skill to one skilled in the art.

RE claim 61, the use of force-locking and form-locking manner is well known steps that one skilled in the art would have taken to make the structure stronger.

Re claim 70, the reinforcing element are forced locked and form locked to the inner surfaces of the side pieces and the thickened region.

Re claim 71, the surface is surface profiling.

Re claim 75-76, please note that since Mueller teaches a rounded off apex in the cavity and Lackman et al teaches reinforcing element that fits snugly to the cavity, once skilled in the art would have used reinforcing elements that have rounded off apex to accommodate the cavity of Mueller.

Response to Arguments

In response to applicant's arguments that the prior arts are not combinable, the examiner respectfully disagrees. Mueller et al does teach composite materials but this does not prevent one skilled in the art at the time the invention was made to have used other parts such as metal to build a structure. Metals do have some particular advantages over composites such as they are easier to manufacture, cost less, etc. One skilled in the art would be motivated to make systems out of metal instead of composites. When metal is used, the welding methods can be used to attach components together to form the structure.

As for the arguments on the Lackman et al reference, please note that reinforcing members are very well known and Lackman et al clearly teaches such. Using reinforcing members to create a stronger supporting system is well known and one skilled in the art would be motivated to use such devices on the aircraft.

Allowable Subject Matter

Claims 11, 12, 13, 16, 17, and 21 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tien Dinh whose telephone number is 571-272-6899. The examiner can normally be reached on 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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